Listing of Claims:

Please **amend** the claims as follows:

Claim 1 **(Cancelled)**

Claim 2 **(Cancelled)**

Claim 3 **(Cancelled)**

Claim 4 **(Cancelled)**

Claim 5 **(Cancelled)**

Claim 6 **(Cancelled)**

Claim 7 **(Cancelled)**

Claim 8 **(Cancelled)**

Claim 9 **(Cancelled)**

Claim 10 **(Cancelled)**

Claim 11 **(Cancelled)**

Claim 12 **(Cancelled)**

Claim 13 **(Cancelled)**

Claim 14 **(Cancelled)**

Claim 15 **(Cancelled)**

Claim 16 **(Cancelled)**

Claim 17 **(Cancelled)**

Claim 18 **(Cancelled)**

Claim 19 **(Cancelled)**

Claim 20 **(Canceled)**

Claim 21 **(Cancelled)**

Claim 22 **(Currently Amended)** An isolated naturally-occurring mutant human aspartoacylase polypeptide ~~yhaign~~ having either an altered ability to hydrolyze N-acetyl-aspartic acid to aspartate and acetate, as compared with a ~~normal~~ wild-type human aspartoacylase, or incapable of hydrolyzing N-acetyl-aspartic acid to aspartate and acetate, and ~~having~~ comprising the amino acid sequence SEQ ID NO: 2 of wild-type human aspartoacylase, except for said mutation, which is

E285 > A,

Y231 > X, and/or

A305 > E,

or ~~an allelic variant of said mutant aspartoacylase~~ a naturally-occurring mutant allele of said wild-type human aspartoacylase.

Claim 23 **(Cancelled)**

Claim 24 **(Previously Presented)** A mutant aspartoacylase of claim 22, wherein the glutamic acid at amino acid position 285 is substituted by alanine.

Claim 25 **(Cancelled)**
Claim 26 **(Cancelled)**
Claim 27 **(Cancelled)**
Claim 28 **(Cancelled)**
Claim 29 **(Cancelled)**
Claim 30 **(Cancelled)**
Claim 31 **(Cancelled)**

Claim 32 **(Cancelled)**

Claim 33 **(Cancelled)**

Claim 34 **(Cancelled)**

Claim 35 **(Cancelled)**

Claim 36 **(Cancelled)**

Claim 37 **(Cancelled)**

Claim 38 **(Cancelled)**

Claim 39 **(Cancelled)**

Claim 40 **(Cancelled)**

Claim 41 **(Cancelled)**

Claim 42 **(Cancelled)**

Claim 43 **(Cancelled)**

Claim 44 **(Cancelled)**

Claim 45 **(Cancelled)**

Claim 46 **(Cancelled)**

Claim 47 **(Cancelled)**

Claim 48 **(Cancelled)**

Claim 49 **(Cancelled)**

Claim 50 **(Cancelled)**

Claim 51 **(Cancelled)**

Claim 52 **(Cancelled)**

Claim 53 **(Cancelled)**

Claim 54 **(Cancelled)**

Claim 55 **(Cancelled)**

Claim 56 **(Cancelled)**

Claim 57 **(Cancelled)**

Claim 58 **(Cancelled)**

Claim 59 **(Cancelled)**

Claim 60 **(Cancelled)**

Claim 61 **(Cancelled)**

Claim 62 **(Cancelled)**

Claim 63 **(Previously Presented)** A transgenic mouse exhibiting Canavan disease symptoms.

Claim 64 **(Cancelled)**

Claim 65 **(Cancelled)**

Claim 66 **(Currently Amended)** A fragment of a mutant human aspartoacylase of claim 22, comprising an aspartoacylase epitope which is immunologically-effective to elicit antibodies that selectively bind to said human aspartoacylase.

Claim 67 **(Currently Amended)** A recombinant ~~normal~~ wild-type human aspartoacylase capable of hydrolyzing N-acetyl aspartic acid to aspartate and acetate, ~~having~~ comprising an amino acid sequence which has a sequence identity of at least 95% to the sequence of SEQ ID NO: 2.

Claim 68 **(Currently Amended)** A fragment of a recombinant ~~normal~~ wild-type human

aspartoacylase of claim ~~20~~ 67, comprising an aspartoacylase epitope which is immunologically-effective to elicit antibodies that selectively bind to said human aspartoacylase.

Claim 69 **(Currently Amended)** A pharmaceutical composition, comprising an isolated ~~normal~~ wild-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof, and a pharmaceutically acceptable carrier.

Claim 70 **(Currently Amended)** An isolated normal human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof, which is free of other cellular components.

Claim 71 **(Currently Amended)** An isolated ~~normal~~ normal-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof, which is free of other human proteins.

Claim 72 **(Currently Amended)** A preparation which consists essentially of a ~~normal~~ wild-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof.

Claim 73 **(Currently Amended)** An isolated ~~normal~~ wild-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-comprising polymorphic form thereof, in a concentration which can be administered to a patient at a dosage of 0.1 to 100 U/kg.

Claim 74 **(Currently Amended)** A ~~normal~~ wild-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof, produced by

(a) culturing a host cell transformed with a vector comprising a DNA which encodes for a normal human aspartoacylase of claim ~~20~~ 80 in a cell culture medium under conditions whereby the aspartoacylase is expressed, and

(b) isolating the thus-produced ~~normal~~ wild-type aspartoacylase.

Claim 75 **(Currently Amended)** A ~~normal~~ wild-type human aspartoacylase ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof, produced in a bacterium, a fungus, or a non-human mammalian cell.

Claim 76 **(Withdrawn)** An immunologically active anti-aspartoacylase polycolonal or monoclonal antibody specific for an aspartoacylase polypeptide of claim 20.

Claim 77 **(Withdrawn)** An immunologically active anti-aspartoacylase polyclonal or monoclonal antibody specific for an aspartoacylase polypeptide of claim 22.

Claim 78 **(Withdrawn)** A hybridoma producing a moloclonal antibody specific for an aspartoacylase polypeptide of claim 20.

Claim 79 **(Withdrawn)** A hybridoma producing a moloclonal antibody specific for an aspartoacylase polypeptide of claim 22.

Claim 80 **(Currently Amended)** A recombinant ~~normal~~ wild-type human aspartoacylase capable of hydrolyzing N-acetyl aspartic acid to aspartate and acetate, ~~having~~ comprising the amino acid sequence SEQ ID NO: 2, or a naturally-occurring polymorphic form thereof.

Claim 81 **(Currently Amended)** A ~~normal~~ wild-type human aspartoacylase polypeptide purified to homogeneity and capable of hydrolyzing N-acetyl-aspartic acid to aspartate and acetate.

Claim 82 **(Previously Presented)** The aspartoacylase of claim 81 having SEQ ID NO: 2.

Claim 83 **(New)** An isolated polypeptide of claim 22 which is encoded by a nucleic acid

which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.

Claim 84 **(New)** An isolated polypeptide of claim 66 which is encoded by a nucleic acid which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.

Claim 85 **(New)** An isolated polypeptide of claim 67 which is encoded by a nucleic acid which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.

Claim 86 **(New)** An isolated polypeptide of claim 68 which is encoded by a nucleic acid which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.

Claim 87 **(New)** An isolated polypeptide of claim 71 which is encoded by a nucleic acid which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.

Claim 88 **(New)** An isolated polypeptide of claim 72 which is encoded by a nucleic acid which specifically hybridizes under stringent conditions to a nucleotide sequence of SEQ ID NO:1.